TRANSPORTATION SECTOR: EFFICIENCY AND ALTERNATIVE FUELS

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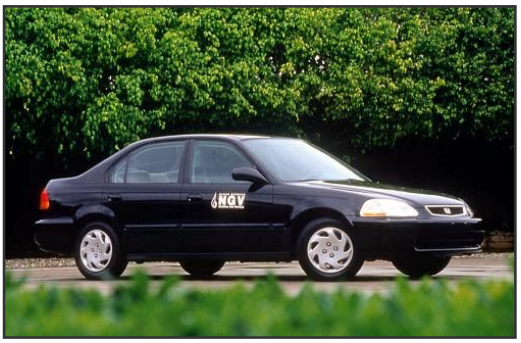
Missouri Fleet Efficiency and Alternative Fuels Program



In 1991, the Missouri General Assembly passed legislation establishing standards for efficient, environmentally responsible state fleet management. The goals of the statute are to increase the average fuel efficiency of the fleet, reduce total transportation fuels consumed and increase the relative amount of alternative fuels used. To these ends, virtually all state agencies have filed extensive reports each year on their fuel use and vehicle acquisition.

Fleet efficiency improvement measures include 1) limiting new acquisitions to vehicles that meet Corporate Average Fuel Economy (CAFE) Standards, 2) preventative maintenance, and 3) carpooling. Although an original goal of the program was to have alternative fuel vehicles represent 30% of the fleet by July 1998, that goal was relaxed to apply only to new acquisitions. Cost restrictions on alternative fuel vehicles (AFVs) were also relaxed making such acquisitions easier. This factor, combined with an increasing number of alternative fuel stations and models of AFVs, is likely to result in an increased number of AFVs and increased use of alternative fuels.

Results:

Cost Savings	Greenhouse Gas Reductions
$257,900	274 MTCE*

In the 1998 fiscal year, the Missouri state fleet consisted of 4,590 vehicles, of which 456 (10%) were alternative fuel vehicles running on biodiesel, propane, compressed natural gas or an ethanol/gasoline mixture. These vehicles used the equivalent of 113,280 gallons of gasoline (3.6% of total fuel use). Because the alternative fuels have lower carbon dioxide (CO_2) emissions than gasoline, these savings were equivalent to 218 metric tons of CO_2 (59.5 MTCE*) in 1998. In addition, the fuel efficiency for passenger cars and light trucks were higher (25.5 mi./GGE and 15.9 mi./GGE respectively) than in previous years, saving 88,370 gallons of gasoline and 787 metric tons of CO_2 (215 MTCE*). This represents a total savings of 1,005 tons CO_2 (274 MTCE*) over 1997 efficiencies.

The fleet efficiency and alternative fuels program not only reduced CO_2 emissions but also resulted in cost savings for the state. Using the alternative fuel vehicles cost $24,500 less than what it would have cost to use gasoline powered vehicles. The improved efficiency of the vehicles saved an additional $233,400 for a total savings of $257,900 (these savings do not consider differences in price between AFVs and standard vehicles).

Principal Actors:

The Fuel Conservation for State Vehicles statute was passed by the Missouri General Assembly in 1991. This along with the federal Energy Policy Act prompted Missouri state agencies to begin the State Fleet Efficiency and Alternative Fuels Program. All state agencies participate, with the Missouri Department of Natural Resources, Division of Energy responsible for collecting data from the individual agencies and preparing annual reports on the program. Partial funding is provided by the Oil Overcharge Settlement and the State Energy Program through the U.S. Department of Energy.

Additional Information:

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This case study is based on information provided by the Missouri Department of Natural Resources, Division of Energy. The picture was obtained from an NREL/PIX picture database.

*Original data have been converted from gallons of fuel to Metric Tons of Carbon Equivalent (MTCE) using the following emission factors:

Gasoline: 19.64 lbs. CO_2/gallon
E-85: 19.23 lbs. CO_2/gallon gasoline equivalent
Propane: 15.47 lbs. CO_2/gallon gasoline equivalent
CNG: 14.65 lbs. CO_2/gallon gasoline equivalent
Biodiesel was not included in the analysis because the fuel carbon content was unknown

These emission factors were derived from fuel carbon contents and fuel energy contents supplied by the U.S. Department of Energy--Energy Information Administration, and the Nebraska Geographic Alliance.